Therapy

USSR UDC 615.281.8.035.4:616.988.75-053.4-036.8

AKSENOV, V. A., SHLIDOVSKIY, D. A., CHADKIN, G. N., [illegible], [illegible], O. V., MOLODTSOVA, L. D., [illegible], R. A., AKSENOV, L. A., [illegible], N. S., and PERSHIN, G. N., All Union Chemico-Pharmaceutical Institute imeni S. Ordzhonikidze, Ministry of Health USSR

"Study of the Prophylactic Value of the New Soviet Antiviral Preparation Oxolin in Preschool Children during the 1969 Influenza Epidemic"

Moscow, Pediatriya, No 5, 1970, pp 18-22

Abstract: The viricidal agent oxolin (tetraoxotetrahydronaphthalene (dihydrate) is effective in the treatment of adenovirus kerato-conjunctivitis, herpetic keratitis, dermatitides of virus etiology, and some acute respiratory diseases. In a double-blind trial, oxolin was administered to 4,170 children one to seven years of age in an unidentified Soviet city during the 1969 influenza epidemic. (It was applied to the nasal mucosa in the form of a 0.25% ointment on a vaseline base twice daily for 40-49 days). Oxolin reduced the incidence of influenza 1.7 times (43%) compared with control children. Severe forms of the disease and complications were 1.1-1.4 times more frequent in the latter than in those who received the preparation, and the course of the disease was 1.2 days longer on the average. The use of oxolin produced side effects in only 0.6% of the cases.

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APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900026-6

Vacuum Tubes

UDC 621.385:537.525

USSR

AKSENOV, I. I., AMELIN, V. Z., BARANOV, N. G., SLATIN, V. I., SMIRNOV, S. A.

"Construction, Electrical, and Operating Characteristics of Heavy-Current Controlled Discharger"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. pribory (Electronic Technology. Scientific-Technical Collection. Gas-Discharge Devices), 1970, Issue 4(20), pp 67-71 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5A170)

Translation: A discharger is described which is intended for operation in circuits of capacitance storage elements and protective devices, with voltages from several hundred volts to 10 kv. The device can commutate currents in a pulse up to 100 ka and is characterized at the same time by a resource well in excess of 3.10^4 of the discharge. The construction of the discharger and the technology of its production are described and the electrical and operational characteristics presented.

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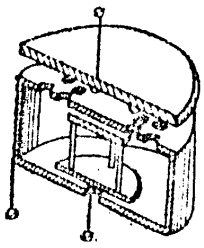
USSR

AKSENOV, I. I., SMIRNOV, S. A., USSR Author's Certificate No 329615



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USSR

UDC: 621.316.933.1

AKSENOV, I. I., SMIRNOV, S. A.

"A Controllable Gas-Discharge Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329615, Division H, filed 18 Mar 70, published 9 Feb 72, pp 212-213

Translation: This Author's Certificate introduces a controllable gas--discharge device which contains an anode, a hollow cathode, and an ignition electrode located inside the anode. Holes are made in the wall of the cathode which faces the anode. As a distinguishing feature of the patent, the electrical strength is increased and the triggering and time characteristics are improved by making the ignition electrode in the form of two current-conducting plate pedestals arranged and connected in parallel, one located at the base of the hollow cathode facing the anode, and the other at the opposite wall of the cathode.

1/2

USSR

UDC 621.387.332

AKSENOV, I. I., BELOUS, V. A., SMIRNOV, S. A.

"Some Singularities of the Operation of a Pulse Discharge Device With Hollow Starting Electrode"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 7, Jul 71, pp 1254-1258

Abstract: The paper presents the results of an experimental study of a new controllable low-pressure gas-discharge pulse device with pure metal cold cathode for switching high-power current pulses. The starting electrode is located in the cavity of the cathode and takes the shape of a hollow cylinder broken up into "honeycomb" cells by dividers. The data presented show the feasibility of using a discharge with hollow cathode to control a low-pressure cold-cathode gas-discharge device. The use of a "honeycomb" igniting electrode noticeably improves the starting characteristics of the device. The time characteristics of the commutator in the "standby" (preparatory) discharge mode in the trigger chamber approach the corresponding characteristics of hot-cathode devices. The results of the studies can be used in developing commutators for use in high-power pulse installations: both under conditions inherent in pulse thyratrons, and under conditions of switching isolated high-power pulses which are typical of some fields of experimental physics and new areas of industrial technology.

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2/2 041 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF EXAMINATION OF 1200 PATIENTS WITH DIFFERENT DISEASES AND 300 ANIMAL THE AUTHORS DISCUSS THE ROUTES OF INVOLVEMENT OF TRACE ELEMENTS INTO THE COMPENSATORY AND ADAPTATIONAL PROCESSES. ONE OF THEM IS THE PARTICIPATION OF TRACE ELEMENTS IN ENZYMATIC REACTIONS. THREE MAIN COMPENSATORY MECHANISMS CAN BE SINGLED OUT; 1. A RESIDUAL ACCUMULATION OF NICKEL, MAGNESIUM, VANADIUM IN ERYTHROCYTES EXPECIALLY IN THE FRACTION OF NONHEMOGLOBIN PORTEINS OCCURRES IN DIFFERENT HYPOXIC CONDITIONS (ANEMIA, CIRCULATORY INSUFFICIENY). IT COULD BE ASSUMED THAT THIS ACCUMULATION IS ASSOCIATED WITH THE FUNCTION OF ENZYMES, WITH THEIR ACTIVIZATION WITH IONS OF HEAVY METALS. THIS REACTION DEVELOPS RATHER EARLY AND DOES NOT DEPEND UPON THE CASES PROVOKING HYPOXY. 2. PATHOLOGICAL AFFECTION OF A PORTION OF SOME IMPORTANT ORGAN NECESSITATES AND INTENSIFIED FUNCTIONING OF INTACT PORTIONS. THE CONTENT OF A NUMBER OF BIOLOGICALLY IMPORTANT TRACE ELEMENTS DECREASES AND IN THE SURROUNDING AREA, INCREASES. THE MENTIONED COMPENSATORY SHIFTS ARE ASSOCIATED WITH PECULIARITIES OF METABOLISM IN THESE TISSUES AND DEPEND UPON THE STAGE OF THE DISEASE. 3. DISTINCT PARTICIPATION OF TRACE ELEMENTS IN COMPENSATORY REACTIONS IS OBSERVED IN SO CALLED "ACUTE SYNDROMES" DEVELOP IN MYOCARDIAL INFARCTION. FACILITY: KAFEDRA FAKUL'TETSKOY TERAPII AND TSENTRAL'NAYA N-I LABORATORIYA VORONEZHSKOGO MEDITSINSKOGO INSTITITA.

UNCLASSIFIED

1/2 041 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SOME COMPENSATORY MECHANISMS OF THE TRACE ELEMENT METABOLISM DISORDER IN PATHOLOGY -U-

AUTHOR-(05)-BALA, YU.M., AKSENOV, G.I., KOPYLOVA, L.M., LIFSHITS, V.M., PLOTKO, S.A.

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A

103086y High-temperature metallographic investigation of the sintering of reduced copper powders. Aksenov, G. I.; Logvinov, A. N.; Drozdov, I. A. (Kuibyshev. Aviats. Inst., Kuibyshev, USSR). *Porosh. Met.* 1970, 10(1), 45–51 (Russ). By using high-temp. metallography, the sintering of metallic reduced Cu powders was studied. The temp. range between the nucleation and the growth of the metallic contact between the powder particles depends on their redn. temp. On the basis of the data on the growth of the contacts, the coeffs. of the surface self-diffusion and the activation energy are quant. detd. The effective surface self-diffusion coeff. of the low-temp. reduced Cu powder is 1 order of magnitude higher than for the Cu powder reduced at a high temp. The effective activation energy value for the growth of the contacts between the reduced powders of Cu does not remain const., but is dependent on the sintering temp. With increasing sintering temp. the effective activation energy value increases due to the increase in the degree of equil. of the structure of the surface layers of the powders.

S. A. Mersol

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REEL/FRAME
19801122

USSR

UDC 621.762.4.001

AKSENOV, G. I., and BUNOVA, G. Z.

"Kinetics of the Compacting Process During the Hot Pressing of Metal Powders"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 42, pp 87-90 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G340 by V. Chelnokov)

Translation: The article investigates the compacting mechanism in the hot pressing of reduced copper powder. Hot pressing was accomplished on a hydraulic press in an atmosphere of dissociated ammonia at 200, 300, 400, 500, 600, and 700° under pressures of 2.4 and 6 tons/cm^2. A rise in temperature increases the compacting rate, density of specimens, and yield of material, and lowers the viscosity. Activation energy of the process is 16-20 kcal/mole. It is assumed that the compacting mechanism at low temperatures the dislocation climb process is superposed on this process. Two illustrations.

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USSR

UDC 621.762.001:669.24

AKSENOV, G. I., and KOLEROV, O. K.

"The Processes of Recovery and Recrystallization in Carbonyl Nickel Powder Preforms"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 42, pp 28-35 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G364 by G. Derkacheva)

Translation: A study is made of processes of recovery and recrystallization in preforms obtained by the pressing of carbonyl nickel powder with bulk weight of 0.8 and 1.44 g/cm^3, in comparison with cold-worked specimens of compact nickel made in the form of thin strip. The strip was produced by rolling the powder and sintering for 1 hr at 1350-1400° in an H_2 atmosphere, compaction-rolling the annealed strip, and resintering under the same conditions. Strain percent of the compact specimens was characterized by height shrinkage during rolling. The strain percents under study ranged from 5 to 95%. In specimens obtained by cold compaction of powder, recovery processes begin at room temperature and continue on heating. The temperature range for recrystallization of preform is 350-450°, that of compact specimens 80-170°. Six illustrations. One table. Bibliography with nine titles.

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USSR

AKSENOV, G. I., et al., Tr. Kuybyshev. aviats. in-t, 1970, vyp. 42, pp 3-8

coefficient of surface diffusion of copper, which indicates the great part played by surface diffusion in the compacting process of freely filled powders. Four illustrations. Two tables.

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USSR

UDC 621.762.5.001

AKSENOV, G. I., LOGVINOV, A. N., and DROZDOV, I. A.

"Analysis of the Kinetics of Compacting Copper Metal Powders During Sintering in the Free-Fill State"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 42, pp 3-8 (from RZh-metallurgiya, No 3, Mar 71, Abstract No 33344 by I. Brokhin)

Translation: A study is made of the kinetics of the compacting process during the sintering of freely filled copper powders (electrolytic and hydrogen-reduced at 250 and 500°). Copper powder was sintered in a dissociated NH_3 atmosphere at 900, 950, 1000, and 1050° with varying holding times. Powder density was determined before and after sintering. The compacting of specimens is due to diffusion processes whose activation energy and rate depend on the defectiveness of the crystal lattice and the development of specific surface. The diffusion coefficient for electrolytic copper power and for that reduced at a low temperature is more than one order to magnitude higher than for copper powder reduced at a high temperature. The values of the diffusion coefficient for powders of the first type are close to the

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USSR

UDC 621.762.001

AKSENOV, G. I., and PANOVA, L. A.

"Gas-Permeability of Metal Powders"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 42, pp 9-16 (from RZh-metallurgiya, No 3, Mar 71, Abstract No 3G358 by O. Padalko)

Translation: The reason for the appearance of pulsations in the hopper during rolling is the gas displaced from the compacted volume. When a rolling speed equal to critical speed is attained, the displacement rate reaches a value at which the lifting power developed by the gas flow becomes equal to the weight of the powder in the hopper. Pulsations begin. Powder pulsation results in nonuniformity of strip density with respect to length. A formula is suggested which makes it possible to determine the critical rolling speed if the magnitude of critical permeability and the ratio of overpressure of displaced gas to the height of the powder column in the hopper are known. The authors experimentally determine the values of critical H_2 and H_0 permeability for various fractions of PZh5 and PZh3 brands of iron powders, PM2 brand of copper powder, pulverized bronze, carbonyl nickel, and iron. The dependences of critical permeability on height of powder level in the hopper are obtained. Five illustrations. One table.

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USSR

UDC 621.762.3.001

AKSENOV, G. I., YENIN, N. YE., SIDNIKHIN, A. I.

"Problem of Chemical-Heat Treatment of Metal Powders in a Fluidized Bed"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 42, pp 69-75 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G425)

Translation: Problems connected with the hydrodynamics of the transition of a stationary layer of powder to a pseudoannealed layer are investigated. The gas flow rate was calculated by the O. M. Todes method. It was demonstrated that the experimental and calculated values are in good correspondence. A schematic is presented for a device for chemical-heat treatment of metal powders in a fluidized bed. There are 2 illustrations, 1 table, and a 4-entry bibliography.

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USSR

UDC 621.762.001

AKSENOV, G. I., and ZABBARPV, R.

"Electric Conductivity of P/M Porous Materials"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 42, pp 24-27 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G359 by G. Derkacheva)

Translation: A study is made of the effect of porosity on the electric conductivity of sintered porous specimens made of iron powder, electrolytic copper powder, carbonyl nickel powder, and ShKs-15 steel powder in the form of filings. Iron and nickel powders ranging in porosity from 0 to 50% and copper specimens with porosity up to 40% are characterized by perfect metal contacts. ShKh-15 steel specimens ranging in porosity from 0 to 40% are characterized by imperfect metal contacts. The electric conductivity of porous iron specimens is practically independent of powder particle size. Three illustrations. One table. Bibliography with three titles.

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USSR

UDC 621.762.2.001:669.3

AKSENOV, G. I., LOGVINOV, A. N., and DROZDOV, I. A.

"High-Temperature Metallographic Study of the Cracking Process During the Reduction of Cupric Oxide"

V sb. Novyye napravleniya razvitiya vysokotemperatur. metallogr. (New Trends in the Development of High-Temperature Metallography -- Collection of Works), Moscow, "Mashinostroyeniye" (Machine-Building), 1971, pp 148-151 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G238 by authors)

Translation of Abstract: The article describes the use of the methods of high-temperature metallography to study the peculiarities in the change of the surface of Cu scale reduced in H_2 at various temperatures (from 500 to 800°). The formation of a network of cracks in the Cu is due to the consequences of volume changes as a result of structural transformations occurring during Cu scale reduction and the concomitant formation of the metallic phase. Crack initiation is accelerated with a rise in the rate at which diffusion processes take place. One illustration. Bibliography with three titles.

1/1

Television

USSR

UDC 621.397(088.8)

AKSENOV, D. D., SAPRYKIN, K. V.

"Television Stroboscope"

USSR Author's Certificate No 252667, Filed 8 Apr 55, Published 23 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G226)

Translation: The patented device for visual observation and recording of phenomena in rotating objects is a closed television system with application of pulse illumination of the transmitting tube for synchronizing the rotating target with the transmitted signal. Synchronization is realized by means of a square pulse generator which is controlled by a photoelement optically connected to the target.

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USSR

UDC 621.357.1:621.794.48

TREGUBOVA, M. A., AKSENOV, B. I., and SHUBIN, A. S.

"Study and Comparison of Different Systems of Electroion-Exchange Regeneration Process of Spent Hydrochloric Iron-Containing Etching Solutions"

Sverdlovsk, Sb. Okhrana prirodn. vod Urala (Collection of Works: Protection of Natural Ural Waters), No 5, 1972, pp 83-86 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, No 23(II), 1972, Abstract No 23I204 by G. I. Volkov)

Translation: The regeneration process of etching solutions was studied in cells divided by (a) two cation-exchanging diaphragms, (b) two cation-exchanging diaphrags with flowing H_2SO_4 in the anode and central chambers, (c) two cation-exchanging diaphragms with flowing H_2SO_4 in the anode chamber, with feeding the initial solution into the central chamber. The latter variant produced the best results with respect to the iron extraction from the solution.

1/1

USSR

UDC 621.382.3

AVSENOV, A.I., KORCHNIKOVA, D.N., PURMEL', V.N.

"Operational Parameters And Characteristics Of Transistors Of Average Power 1T403A--1T403I (Review)"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, Issue 2(52), pp 167-168 (from RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3B195)

Translation: The families of input and output voltampere characteristics are presented for the transistors 1T403A--1T403I in circuits with a common base and common emitter, and also the relation $h_{21e} = f(I_k, V_k)$ in the range of collector currents and voltages. All measurements were conducted at temperatures of 20 and 70° C. It is reported that the thermal constants junction--case and junction--medium amount to 60-70 msec and 10 min, respectively. N.K.

1/1

USSR

UDC: 621.396.6.019.3:621.382

AKSENOV, A. I., KUTYRKIN, Yu. M.

"Analysis of Modes of Operation of Semiconductor Devices in Radio Electronic Equipment Systems"

Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry), Vyp. 10, Moscow, 1970, pp 69-71 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2V316)

Translation: Data are given from an analysis of the electrical modes of operation of semiconductor devices in radio electronic circuits. It is shown how basic electrical parameters depend on the mode of operation of semiconductor devices. Causes for failure of semiconductor devices are discussed.

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USSR

UDC 621.382(047.1)

ZHDANOV, V.I., ARSENOV, A.I., BORISOV, V.A., MITROFANOV, A.V.

"New Semiconductor Devices For Radioelectronics Apparatus"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, Issue 2(59), pp 11-20 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B9)

Translation: The paper considers the principal characteristics and directions in the development of contemporary discrete semiconductor devices for radioelectronics apparatus for wide-scale application. In the development of power transistors, three principal directions are indicated: (1) Creation of a transistor for increasing the power with a high critical frequency of amplification of the current and small interelectrode capacitances applicable to high-frequency and microwave techniques; (2) Development of a transistor with a large amount of production of the maximum current of the collector at the permissible collector voltage with large power dissipation and a critical frequency of amplification up to 20 MHz, broadening use in amplifier and switching circuits; and (3) Creation of high-voltage transistors necessary for the final stage of the horizontal sweep of television and a number of other circuits. 7 ill. V.K.

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USSR

CHERNYSHEV, A. A., et al., Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 2(59), pp 5-10

tendency to obtain specified output characteristics by ruggedization of the norms on the parameters of the semiconductor devices, matching them in pairs, etc., the reliability of the apparatus is reduced. During construction of apparatus it is necessary to take into account the technological spread and the drift of the parameters of semiconductor devices which is not subordinated to any kind of specific law. Circuit -- construction breakdowns (incorrect mounting in the assembly bending lead outs, etc.) can lead to a deterioration of the electrical and thermal operating conditions of the semiconductor devices. Reliability of operation of the apparatus is also connected with the presence of methods and guidance which determine the order and conditions of use and control of the methods of use of semiconductor devices. At present recommendations are prepared on the use of stabilitrons, non-housed devices and guidance is worked out on the use of thyristors, and devices with negative resistance. Before 1975 guidance must be issued on the use of varicaps, microwave diodes, light-emitting diodes, field-effect transistors, and others. 1 ref. I. M.

2/2

USSR

UDC 612.382

CHERNYSHEV, A. A., AKSENOV, A. I., BORISOV, V. A.

"Use of Semiconductor Devices in a Radioelectronics Apparatus and Means of Increasing Its Operational Reliability"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 2(59), pp 5-10 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B560)

Translation: An expansion of the functional problems which are met by a contemporary apparatus leads to an increase of the quantity of elements entering into it. Hence there results an increase of the requirements on the reliability of semiconductor devices. Failure of semiconductor devices in an apparatus is principally produced by their incorrect use. Use of semiconductor devices in regimes exceeding the maximum permissible norms leads to gradual or sudden failure. At present, breakdowns in the use of a semiconductor device in a static regime is almost not found; breakdowns are primarily connected with the transient processes of operation of a circuit. A third category of breakdown arises with reduction of the load to an unjustifiedly small magnitude when, because of the significant effect of the back currents, instability of the load currents is increased. With the

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parameters on temperature of the surrounding atmosphere. They give a comparison of the parameters of the photoresistors during operation in longitudinal and transverse modes.

The article contains 11 figures and 6 bibliographic references.

UDC [illegible].311 → 621.396.6-181.418

Analysis of Several Characteristics of the Operation of a Resonance High-Frequency [illegible] Amplifier Made According to a Circuit With a Common Emitter. Arsenov, A. [illegible], D'yachkov, [illegible], Korobeynikov, [illegible], [illegible], [illegible], and Butyr-[illegible], Yu.M.; In the collection [illegible], edited by F.V. Lukin, No 5, p 313, Sovetskoye Radio Publishing House, 1972.

The article cites an analysis of the operation of a resonance microminiature high-frequency amplifier, operating in a linear mode. The authors show that with a constant time of the emitter circuit equal to zero, the magnitude of the capacitance of the block of condensor is found to be the least. They also established that, for contemporary case-free high-frequency dynamic capacitances on the frequency characteristics of the cascade can be ignored.

The article contains 6 figures, 2 tables, and 6 bibliographic references.

-END-

11,734
CSO: 0702/73-S

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900026-6

AKSENOV, A. I. Microelectronics.

JPRS 57333

25 October 1972

MICROELECTRONICS

Excerpts from Russian-language book edited by F. V. Lukin, Mikroelektronika, No 5, 1972, Sovetskoye Radio Publishing House, Moscow, pp 221.382:621.396.6-181.5.

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USSR

UDC 621.382/.383.004.13

IVANOV, V.I., AKSENOV, A.I.

"Noncased Semiconductor Devices And Special Features Of Their Use"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), Issue 4, Moscow, "Sov.radio," 1972, pp 31-40 (from RZh:Elektronika i yeye primeneniye, No 9, Sept. 1972, Abstract No 9B372)

Translation: Design variations and the technological protection of noncased [beskorpusnyy] semiconductor devices are considered. The special features of their assembly and protection in integrated hybrid microcircuits are presented, as well the principal parameters of a number of transistors and diodes in noncased fulfillment. Recommendations are made with respect to the use of noncased semiconductor devices in integrated hybrid microcircuits. 4 ill. 2 tab. 1 ref. Summary.

1/1

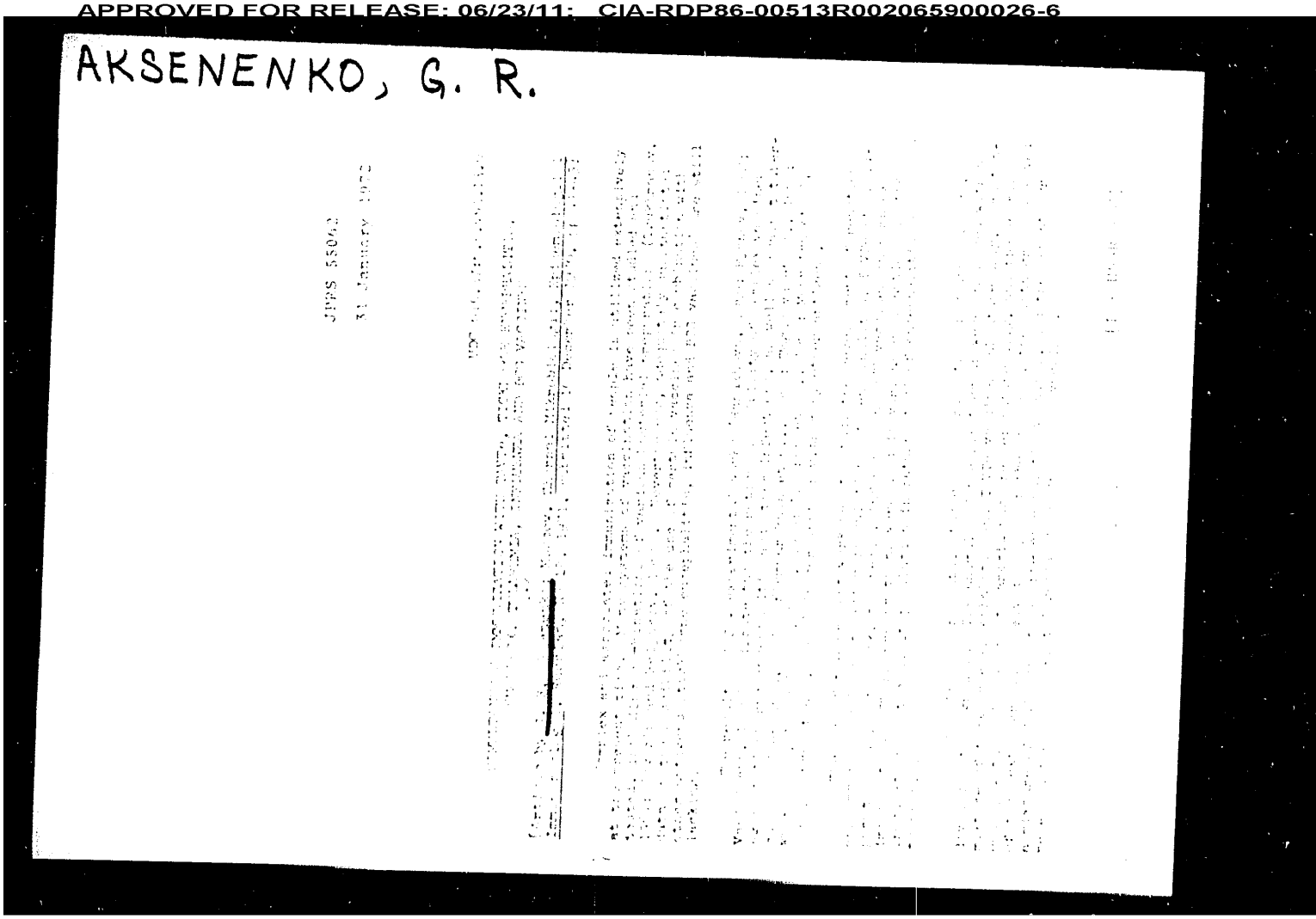
USSR

VASIL'YEVA, O. A., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1973, pp 109-115

The results indicate that there are dynamic changes in both innate and acquired immunity following immunization, and that subsequent immunizations should be postponed at least for a month or two. Furthermore, whether given in combination or singly, the vaccines were equally effective in evoking antibody formation.

3/3

AKSENENKO, G. R.



USSR

UDC 615.472:615.371/.372.03?

AKSENENKO, G. R., Tomsk Medical Institute

"Immunization of Human Beings with a Jet Injector"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1972, pp 28-33

Abstract: The use of a jet injector in the tularin and tuberculin tests produced the same number of positive reactions and identical size of infiltrates as when regular syringes were used. Administration of a mixture of smallpox and tularemia vaccines with the injector caused the same local reaction and immunological response as when the vaccines were applied by the scarification technique. The results were comparable when BCG vaccine was injected. The demonstrated efficiency of the jet injector for associated immunization against smallpox and tularemia has significant practical implications for the USSR where regular revaccinations against these diseases are carried out at the same time intervals and over large areas of the country.

1/1

USSR

VASIL'YEVA, O. A., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1973, pp 109-115

of TABT, whether given alone or in combination with other vaccines); by day 30 complement levels approached normal values. Most pronounced depression of complement levels was encountered in subjects immunized with the encephalitis vaccine and the typhoid-tetratoxoid combination, whether administered alone or in combination with other vaccines. Administration of the encephalitis vaccine and typhoid-tetratoxoid either alone or in combination with other preparations led to a 3-fold depression of serum lysozyme concentrations on days 7 and 14, with subsequent elevation of concentrations. Subjects immunized with the smallpox vaccine showed depressed lysozyme levels on day 14. TABT elicited a short-term elevation of serum lysozyme by day 7, and then a fall to normal levels after 2 to 4 weeks. Normal serum hemolysin levels were elevated in all subjects by day 7, depressed by day 14, and increased by day 30. The studies also showed that subcutaneous administrations of the vaccines decreased serum bactericidal activity, as determined on day 7, 5-6 fold; subsequently, bactericidal activity returned to normal levels and again fell sharply by day 30. The intracutaneous and superficial administration of the smallpox vaccine elicited a 3-fold decrease in serum bactericidal activity when measured on day 14, which remained at that level until the end of the month.

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USSR UDC 612.017.1-06:614.47

VASIL'YEVA, O. A., AKSENENKO, G. R., and SHIPULINA, N. I., Tomsk Institute of Vaccines and Sera, Tomsk Medical Institute

"Immunobiologic Reactivity of Man in Combined Vaccination"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1973, pp 109-115

Abstract: Studies were made of vaccine reactions in 845 subjects immunized with 7 different combinations of viral and bacterial vaccines, and of non-specific immune indexes in 140 persons similarly immunized. All subjects were 22-24 years old. The vaccines tested were commercial preparations of tick-borne encephalitis virus, smallpox virus, tularemia, typhoid-paratyphoid-tetanus (TABT), and a typhoid vaccine with tetratoxoid (botulinus types A, B, and E, and tetanus). The subjects were followed for 30 days. The most frequent vaccine reactions were encountered in subjects vaccinated with TABT (weak reactions in 42% of subjects and moderate in 10%), and with the typhoid-tetratoxoid combination (weak reactions in 25% of the subjects and moderate reactions in 12% of the subjects). Administration of these vaccines in combination with other vaccines did not alter the vaccine reactions. Complement levels were depressed in all subjects by day 7, and continued to fall by day 14 (with the exception 1/3

USSR

UDC 669.71.053.4.094

AKSEL'RUD, G. A., ABRAMOV, V. YA., DUDKO, T. A., REYFMAN, E. D., SEMENISHIN, YE. M.

"Kinetics of Leaching Bauxite Cakes"

Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 91-95 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G140)

Translation: The kinetics of extracting sodium aluminate from various fractions of bauxite cakes in the 45-95° temperature range are investigated. The diffusion coefficients of sodium aluminate are determined, and their dependence on the temperature variation is found. The characteristics of the mechanism of leaching of the cakes are established. The values of the diffusion coefficient found in this study can be used when calculating counterflow processes and equipment. There are 3 illustrations and 1 table.

1/1

USSR

UDC 669.71.053.4.094

AKSEL'RUD, G. A., ABRAMOV, V. YA., REYFMAN, E. D., SEMENISHIN, YE. M., DUDKO, T. A.

"Mathematical Model of the Diffusion Counter Flow Process of Leaching Alumina-Containing Cakes"

Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 96-102 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G137)

Translation: A mathematical model of the diffusion counter-flow process of leaching large-fraction cakes is proposed. A method and an example of calculating the diffusion counter-flow process of leaching bauxite cakes in a percolation unit are presented. There are 3 illustrations and 1 table.

1/1

2/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0118790

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPARK DISCHARGES CAUSING ACOUSTIC PULSED OSCILLATIONS IN THE LIQ. PHASE WERE EFFECTIVE IN ENHANCING DISSOLN. OF SOLIDS IN LIQS. THE EFFECT OF THE DISCHARGES WAS STUDIED EXPTL. BY USING KNO SUB3 CYLINDERS HANGING IN A LIQ. OR FASTENED PARTICLES OF GYPSUM. A MAX. INCREASE IN THE MASS TRANSFER COEFF. IS OBSD. IN THE RESULTING AMPLITUDE OF OSCILLATIONS RANGE OF 190-200 HZ WHEN THE FASTENED PARTICLES SHOWED AN INCREASE OF 500PERCENT; FOR THE LOOSE PARTICLES IT WAS 230PERCENT. THE INTENSITY OF SPARKING WAS 0.5-1 J AND THE DURATION OF A DISCHARGE WAS 25 MU SEC. FACILITY: POLITEKH. INST., LVOV, USSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--METHOD OF SPARK DISCHARGES FOR MASS TRANSFER ACCELERATION IN A SOLID LIQUID SYSTEM -U-

AUTHOR-(04)-MOLCHANOV, A.D., AKSELRUD, G.A., CHERNYAVSKIY, A.I., FIKLISTOV, I.N.

COUNTRY OF INFO--USSR

SOURCE--INZH.-FIZ. ZH. 1970, 17(2), 293-8

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SPARK DISCHARGE, OSCILLATION, ACOUSTIC EMISSION, MASS TRANSFER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1826 STEP NO--UR/0170/70/017/002/0293/0298

CIRC ACCESSION NO--AP0118790

UNCLASSIFIED

USSR UDC 669.71.053.4.094

AKSEL'RUD, G. A., ABRAMOV, V. YA., REYFMAN, E. D., SEMENISHIN, YE. M., GUMNITSKAYA, N. A.

"Extraction of Sodium Aluminate in Capillary Models"

Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 85-90 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G142)

Translation: Results are presented from a study of the process of extracting sodium aluminate by solutions of various concentration at temperatures of 60, 75, and 95°. The values of the diffusion coefficient of sodium aluminate are calculated on the basis of processing the experimental data. An explanation is presented for the nature of variation of the magnitudes of the diffusion coefficients based on the Na_2O-Al_2O_3-H_2O system. There are 3 illustrations and 1 table.

1/1

USSR

UDC 669.71.053.4.094

AKSEL'RUD, G. A., ABRAMOV, V. YA., SEMENISHIN, YE. M., REYFMAN, E. D., SADOVOY, G. T.

"Kinetics of Extraction of Alkali from Sodium Ferrite"

Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 82-84 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G143)

Translation: A study was made of the kinetics of extracting Na_2O under various temperature conditions during decomposition of sodium ferrite by water as applied to leaching bauxite cakes. The limiting stage of the given process is established, and values of the diffusion coefficients are determined. There is 1 table.

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USSR

AKSEL'RUD, G. A., et al., Red. Kollegiya Inzh.-Fiz. Zh AN BSSR, 1972, No 4762-72 DEP of 25 Aug 72

is dissolving a weighed layer of granulated gypsum, grain size of 1-1.5 mm, in a 38 mm diameter pipe, a 2.7 times increase of speed was achieved with discharge energy of 50 joule, frequency of 4 hz, energy density of 1400 kilojoule by 1 m^2 of weighed layer. The theoretical equations agree satisfactorily with the experimental data and in the range of investigation can be used for the design of mass transfer apparatus. 8 references.

2/2

USSR UDC: 532.72; 669.015.23

AKSEL'RUD, G.A., MOLCHANOV, A.D., FIKLISTOV, I.N. and KOSYK, V.P.

"Mass Transfer in Solid Body-Liquid System Under Action of High-Voltage Sparks in Pipe"

Minsk, Red. Kollegiya Inzh.-Fiz. Zh AN BSSR (Editorial Board of Engineering and Physics Journal, Academy of Sciences Belorussian SSR), 1972, Dept. manuscript in VINITI, No 4762-72 DEP of 25 Aug 72 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B1044 DEP)

Translation: From the approximation of the underwater point explosion theory the qualitative universal equations are obtained, which describe the kinetics of external mass transfer during oscillatory motion of liquid in the pipe excited by high-voltage spark discharges in the stationary liquid and in the steady flow. Experimental verification of these equations was conducted with the case of dissolving fixed cylindrical specimens of KNO_3 salt in distilled water. It confirmed the high effectiveness of spark discharge method. For instance,

Adsorption

USSR UDC 66.071.7

AKSEL'ROD, YU. V., DIL'MAN, V. V., FURMER, YU. V.

"Interfacial Turbulence in a Falling Liquid Film Under Conditions of Chemisorption"

Teoreticheskiye Osnovy Khimicheskoy Tekhnologii, Vol 5, No 5, 1971, pp 676-683

Abstract: The flow of a fluid film from desorption of poorly soluble gases (N_2O, He, Xe) from aqueous solutions of monoethanolamine (MEA) and NaOH was experimentally studied in the wave and turbulent modes with simultaneous chemisorption of CO_2 from the gas. It is shown for the CO_2-MEA system that when the chemical reaction occurs, the rate of desorption of the inert component sharply increases, which is explained by the development of convective flows in the immediate area of the phase division surface. It is shown that under conditions of turbulence between phases, molecular diffusion has no significant influence on the rate of the transfer processes.

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USSR UDC: 666.6:620.174.05

AKSEL'ROD, Ye. I., VISHNEVSKIY, I. I., KOVALEV, A. I., and TARASOV, V. A.

"Machine for Measuring High-Temperature Deformation in Ceramic Materials by the Pure Bend Method"

Moscow, Zavodskaya laboratoriya, No. 1, 1971, pp 110-111

Abstract: The machine described in this article tests for creep, at temperatures up to 1900° C, densely sintered ceramic specimens by subjecting them to a pure bend. The specimen is heated in a sealed, water-cooled chamber in an electric-resistance oven, and is deformed by a dynamometer consisting of a spring of special steel in the shape of the arc of a circle. Its deformation is measured at the center and at two supporting points by three indicators which can be read through a window in the chamber wall. The temperature of the specimen is measured at its center and its ends by two calibrated tungsten-rhenium thermocouples, type VR5/20. A diagram of the machine, its parts identified by callouts, is given as well as curves of the creep in specimens made of polycrystalline corundum. The authors are members of the Ukrainian Scientific Research Institute of Refractory Materials.
1/1

USSR

UDC 547.963.3

MIRZABEKOV, A. D., AKSEL'ROD, V. D., VENKSTERN, T. V., LI, L., KAUFILINA, A. I., and BAYEV, A. A., Institute of Molecular Biology Academy of Sciences USSR

"Primary Structure of Valine Transfer RNA 1 From Saccharomyces cerevisiae. 3. Reconstruction of the Molecule"

Moscow, Molekulyarnaya Biologiya, No 1, 1976, pp 76-90

Abstract: The first stage of analysis of the primary structure of valine tRNA 1 from Saaccharomyces cerevisiae and the final reconstruction of the molecule are described. The procedure required obtaining large fragments (metamers) from the separated 3' and 5' halves of $tRNA_1^{Val}$ using guanyl RNAse, and then determining their oligonucleotide composition with a specially devised micromethod of fractionating and identifying the oligonucleotides. The sequence of the oligonucleotides within each metamer was established by comparing their composition. The $tRNA_1^{Val}$ molecule was reconstructed by overlapping both the oligonucleotides of the pyrimidyl and guanyl ribonuclease hydroysates of the whole molecule and the metamers of its halves.
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Acc. Nr: AP0044694 A Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1, pp 76-96

TRE PRIMARY STRUCTURE OF VALINE TRANSFER RNA I. 3. THE RECONSTRUCTION OF THE MOLECULE

Mirzabekov, A. D.; Aksel'rod, V. D.
Venkstern, T. V.: Li, L.; Krutilina, A. I.; Bayev, A. A.

Institute of Molecular Biology, Academy of Sciences, USSR, Moscow

The final stages of analysis of the valine tRNA I from *Saccharomyces cerevisiae* and the reconstruction of the molecule is described. Large fragments (metamers) were obtained from the separated 3'- and 5'-halves of $tRNA_1^{Val}$ and their oligonucleotide composition was determined by means of a microchromatographic method. The $tRNA_1^{Val}$ primary structure was formulated.

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REEL/FRAME
19771428

02 kc

2/2 041 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0133554

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM STUDIES OF THE STATIC HEAD OF LIQ. (WATER) AT VARIOUS POINTS ABOVE A 8-MM THICK, 200-MM DIAM. PERFORATED PLATE WITH 31 HOLES OF 3-MM DIAM. AND AT AIR VELOCITIES OF 30-400 M-SEC. THROUGH THE ORIFICES, THE FOLLOWING EQUATION WAS DEVELOPED FOR THE COEFF. K, CHARACTERIZING THE DECREASE IN MEASURABLE STATIC HEAD COMPARED TO THE ACTUAL HEAD: GAMMA SUBL (BAR H MINUS BAR H) EQUALS K (GAMMA SUBG W SUBO PRIME2-2G). WHERE GAMMA AND GAMMA SUBG ARE THE DS. OF LIQ. AND GAS, BAR H AND BAR H ARE THE EFFECTIVE AND AV. MEASURED STATIC LIQ. HEADS, AND W SUBO IS THE GAS VELOCITY. THE EXPT. VALUES OF K FOR THIS STUDY WAS 0.0167 WHICH COMPARES WELL WITH A CALCD. VALUE OF 0.014, AND WITH OTHER DATA IN THE LITERATURE. FACILITY: MOSK. INST. KHIM. MASHINOSTR., MOSCOW, USSR.

UNCLASSIFIED

1/2 041 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--HYDRAULIC PRINCIPLES OF BUBBLING -U-

AUTHOR-(05)-POZIN, L.S., TYLES, V.G., AKSELROD, L.S., AEROV, M.E., BYSTROVA, T.A.
COUNTRY OF INFO--USSR

A

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 271-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PRESSURE GRADIENT, PRESSURE MEASUREMENT, GAS FLOW, STATIC PRESSURE, WATER, TWO PHASE FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1649 STEP NO--UR/0153/70/013/002/0271/0276

CIRC ACCESSION NO--AT0133554
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0126984

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POROUS NH SUB4 NO SUB3 CRYSTALS ARE PREPD. BY DELIVERING AN 80-5PERCENT CONCD. NH SUB4 NO SUB3 SOLN. INTO A FLUIDIZED BED AT 85-95DEGREES.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--GRANULAR AMMONIUM NITRATE -U-

AUTHOR-(05)-SHAKHOVA, N.A., AKSELROD, L.S., MUKHINA, A.N., SHTELMASHENKO, G.V., POLYAKOV, N.N.

COUNTRY OF INFO--USSR

A

SOURCE--U.S.S.R. 264,370

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMMONIUM NITRATE, CHEMICAL PATENT, CRYSTAL, FLUIDIZED BED

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1453 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126984

UNCLASSIFIED

Acc. Nr.: AP0032017 Ref. Code: [illegible]

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 72-81

EFFICIENCY OF COMPLEX TREATMENT OF FRESHLY DETECTED PATIENTS WITH PULMONARY TUBERCULOSIS FROM THE CLINICAL AND FUNCTIONAL POINTS OF VIEW

M. I. Taranenko, L. B. Aksel'rod and B. Z. Radovil'sk[illegible] [illegible]

It is concluded that complex treatment of patients with freshly detected [illegible] of the lungs by means of antibacterial, hormonal and tissue pre[illegible] larger incidence of complete absence of respiratory insufficiency than in [illegible] where only antibacterial treatment was emplyoed. Complex therapy of pulmonary tuberculosis also resulted in improvement of electrocardiographic data.

REEL/FRAME
19700169

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900026-6

USSR

AKSEL'ROD, I. R., BELOYUS, L. F.

"A Dialogue with the SIRIUS System"

Vychisl. mat. i Vychisl. Tekhn [Computer Mathematics and Equipment -- Collection of Works], No 2, Khar'kov, 1971, pp 68-77, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V533 by the author's).

Translation: The text is presented from a dialogue between the author's and the SIRIUS conversational programming system at the computer center of FTINT, Acad. Sci. UkSSR in January of 1971. Some technical characteristics of the system were presented.

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USSR

USSR

AKSEL'ROD, I. R., BELOUS, L. F.

"Basic Principles of the SPUTNIK Translator System"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 49-51, Discussion 71-77 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V631, by the authors).

Translation: Problems of construction of the SPUTNIK machine-independent language and system are studied. The main purpose of creation of a language is to write a translator for CIRCUS. However, it can be useful for descriptions of other translators as well.

USSR

AKSEL'ROD, I. R.

"Increasing the Intellect of Analytic Systems"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 68-69 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V655, by the author).

Translation: Certain problems of the organization of systems for performance of analytic transforms are studied. In particular, the problems of increasing the intellect of such systems, of the roll of the dialogue mode and of the similarity of the input languages of such systems to natural language are discussed.

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USSR

AKSEL'ROD, I. R., BELOUS, L. F.

"Foreign Systems for Analytic Transforms by Digital Computer"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 6-17 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V645, by the authors).

Translation: This article is a review report on foreign systems for performance of analytic transforms on digital computers and contains descriptions of 16 systems. Brief information is presented on the input language, internal representations and their realizations. 16 biblio. refs.

1/1

REANIMATOLOGY

[Article by candidate of Medical Sciences A. Akkel'rod; Moscow, Nauka i Zhizn', Russian, No 11, 1972, pp 33-37]

"The past decade has been marked by the appearance of a number of new scientific disciplines that are paving the way for the study of many of nature's phenomena that earlier seemed incomprehensible. Among such young sciences must be included reanimatology -- the science of resuscitating an organism, the treatment and prevention of a sudden "groundless" death. The discussion here concerns those cases where an organism is perishing, but whose vitally important systems could still fulfill their functions if they were accorded timely essential aid," -- so wrote one of the founders of the new science, corresponding member of the USSR Academy of Medical Sciences, Professor V. A. Negovskiy, in his monograph, Aktual'nyye Problemy Reanimatologii (Vital Problems of Reanimatology).

"From ancient times to the present day the physician at the bedside of the dying patient has been agonizingly seeking a way of overcoming the death process as it develops and has been trying to find the most vulnerable links in the integral disintegrating process of the as yet viable organism, in order to influence them.

The contemporary level of medical and biological science already makes it possible for us to examine from many aspects the attenuation of an organism's vital functions and to turn the empirical battle for the life of the dying person into a system of purposeful and scientifically substantiated measures."

According to a decree by the USSR Minister of Public Health Academician B. V. Petrovskiy, by 1974 reanimation sections are to be set up in all hospitals of the Soviet Union having more than 500 beds.

JPRS 58100
30 Jan 73

[I - USSR - C]

AKSEL'ROD, A.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900026-6

USSR UDC 539.374

AKSEL'RAD, E. L., LETOV, L. A., Leningrad

"Geometrically Nonlinear Axisymmetrical Deformation of Toroidal Shells"

Kiev, Prikladnaya Mekhanika, Vol 9, No 6, Jun 73, pp 31-40.

Abstract: The stress and deformation state of toroidal shells is studied using solution of the Meissner equations in trigonometric series by a matrix method. Geometrically nonlinear deformation of circular, elliptical and toroidal shells is studied, as well as shells with local initial meridianal irregularities. A formula is suggested for estimation of the influence of geometric nonlinearity on the bending stresses. An engineering calculation method not requiring the use of a computer is developed for closed toroidal shells on the basis of the Meissner equations.

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USSR UDC: 531.8

AKSEL'RAD, E. L. and VASIL'YEV, V. V.

"Computing Bellows Loaded by a Bending Moment"

Leningrad, Priborostroyeniye, No 5, 1972, pp 78-83

Abstract: A description is given of the graphical-analytical calculation of single-layered bellows with variable wall thickness, made by the hydraulic method, under a bending load. The basis for this description is a new method for solving equations of the Meissner type on an electronic digital computer. Results of the calculation were compared with experimental data and found to be in good agreement with the latter. The profile of the bellows under consideration is sketched, and the formulas for six dimensionless parameters characterizing the geometry of the profile are given. Computations were done on the Minsk-22, and the results are given in a table, along with the experimental results for comparison. The algorithm for making the analytical calculations on the computer is given in an earlier article by the first author named above (Periodicheskoye resheniye osesimmetrichnoy zadachi teorii obolochek -- Periodic Solution of an Axially Symmetrical Problem in Shell Theory -- Mekhanika tverdogo tela, No 2, 1966). The authors are with the Leningrad Institute of Railroad Engineers.

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UDC 551.5 + 551.[illegible](47)

DEVELOPMENT OF HYDROMETEOROLOGICAL SCIENCE IN CENTRAL ASIA

[Article by Candidate of Geographic Sciences [illegible], Academy, Institute of Geographic Sciences B. A. Avzemitat, Candidate of Physical and Mathematical Sciences A. V. Dzhuraev, Central Asian Regional Scientific Research Hydrometeorological Institute, Moscow, Meteorologiya i Gidrologiya, Russian, No 11, 1972, submitted 21 August 1972, pp 85-93]

A survey is given of the development of hydrometeorological science in Central Asia. The prospects for further studies in the field of regional meteorology and hydrology are discussed.

The beginning of hydrometeorological work in Central Asia belongs to the 1870's when the first meteorological stations were founded in this territory. After V. I. Lenin signed the decree to organize the meteorological service in Central Asia on 21 June 1921, the meteorological network began to develop quickly, and a great deal of attention has been given to scientific research in various fields of hydrometeorology.

At the present time the scientific and procedural work with respect to hydrometeorology in Central Asia is led and coordinated by the Central Asian Regional Scientific Research Hydrometeorological Institute which is simultaneously the regional center entering into the system of the World Weather Service.

Below, a brief survey is presented of the most important results obtained in the field of hydrometeorology in Uzbekistan, and with respect to its divisions, in all of Central Asia.

Weather Forecasting

After the Tashkent Weather Office was created in 1932, work began in the study of synoptic processes in Central Asia.

The successful development of research in the field of regional synoptics is connected to a great extent with the names of V. A. Bugayev and V. A. Dzhordzhio, who for many years headed this area in Central Asia. Under the

JPRS 58133
27 Jul 73

USSR

AKSANOVA, L. A., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 11, 1971, pp 3-5

Some compounds were prepared by the cyclization of corresponding arylhydrozons of homochroman-5-one (Ia-Id); others (IIa-IIh), by the reaction of dialkylaminoalkyl chlorides with Na derivatives of oxepinoindoles (Ia-Id). The latter were synthesized by treating oxepinoindoles (Ia-Id) with NaH in dimethylformamide. Reduction of oxepinoindoles Ia and Ib with Zn dust in HCl, in the presence of $HgCl_2$ yielded corresponding IIIa and IIIb. Reaction of IIIa with chloropropionyl chloride yielded IIIc which in turn formed IIId and IIIe on reaction with piperidine and diethylamine. Pharmacological tests for cholinolytic, antiserotouine and spasmolytic activity were carried out with white mice. Empirical formulas and melting points for IIb-IIh compounds are given, as well as detailed descriptions of some reactions.

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USSR

AKSANOVA, L. A., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 11, 1971, pp 3-5

I $R' = H$; Ia $R = H$; Ib $R = CH_3$; Ic $R = Cl$; Id $R = Br$.

IIa $R = H$, $R' = (CH_2)_2N(CH_3)_2$; IIb $R = H$, $R' = (CH_2)_3N(CH_3)_2$;

IIc $R = CH_3$, $R' = (CH_2)_2N(CH_3)_2$; IId $R = CH_3$, $R' = (CH_2)_3N(CH_3)_2$;

IIe $R = Cl$, $R' = (CH_2)_2N(CH_3)_2$; IIf $R = Cl$, $R' = (CH_2)_2N(CH_3)_2$;

IIg $R = Br$, $R' = (CH_2)_2N(CH_3)_2$; IIh $R = Br$, $R' = (CH_2)_3N(CH_3)_2$.

IIIa $R = R' = H$; IIIb $R = CH_3$, $R' = H$; IIIc $R = H$, $R' = CO(CH_2)_2Cl$;

IIId $R = H$, $R' = COCH_2CH_2N(CH_2)_4CH_2$; IIIe $R = H$, $R' = CO(CH_2)_2N(C_2H_5)_2$.

2/3

USSR

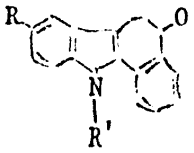
UDC 615.31.547.75

AKSANOVA, L. A., SHARKOVA, L. M., KUCHEROVA, N. F., ARTEMENKO, G. N., and FEDOROVA, I. B., Scientific Research Institute of Pharmacology of the Academy of Medical Sciences of USSR, Moscow

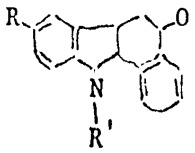
"Indole Derivatives. XXXVI. Synthesis and Pharmacological Investigation of Some Benzoxepinoindole Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 11, 1971, pp 3-5

Abstract: In searching for psychotropic agents several N-substituted dihydro- and tetrahydrobenzoxepinoindoles with sedative and antidepressant properties were synthesized.



I-II



III

1/3

USSR

UDC 547.728.2'83.07

KUCHEROV, N. F., AKSANOVA, L. A., SHARKOVA, L. M., and ZAGOREVSKIY, Institute of Pharmacology, USSR Academy of Sciences, at Moscow

"Synthesis of Derivatives of a New Heterocyclic System of 1,2,3,4-Tetrahydrobenzofuro[3,2-c]pyridine"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 11, Nov 71, pp 1469-1472

Abstract: Even though 1,2,3,4-tetrahydro- γ -carboline and its derivatives have been the objects of pharmaceutical research for some years, their oxygenous analogs, the 1,2,3,4-tetrahydro[3,2-c]pyridines, have so far not been synthesized. Using the fairly new method of creating a benzofuran system by cyclization of aryl esters of the ketoximes, the authors synthesized a tricyclic system of thiopyrano[4,3-b]benzofuran. Melting points, empirical formulas, compositions and yields of nine oxime esters and seven of the above-mentioned pyridines were determined.

1/1

UDC 547.751'891.1.07

USSR

SHARKOVA, L. M., AKSANOVA, L. A., and KUCHEROVA, N. F., Institute of Pharmacology, Academy Medicinal Sciences USSR, Moscow

"Indole Derivatives. XXXV. Synthesis of 12H-6,7-Hihydrobenz[2',3'] oxepino-[4,5-b]-indoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 71, pp 65-67

Abstract: Fisher condensation of 4,5-dihydro-1-benzoxepinane-5 (I) with various arylhydrazines was studied. It was determined that cyclization of (I) arylhydrazones is facilitated by introduction of electron donating substituents into the para position, the electron accepting substituents having the opposite effect. A mixture of 3 g of (I) and 2.7 g of p-tolylhydrazine hydrochloride was refluxed for 15 min in 30 ml of 15% alcoholic HCl, then poured into 120 ml water. The separated oil was triturated and recrystallized to give 9-methyl-12H-6,7-dihydrobenz[2,3']-oxepino-[4,5-b]-indole, m.p. 135-137°. A series of derivatives with varying substituents at 9 (and 8-9) position was obtained analogously. 9-(β-diethylaminoethoxycarbonyl)-12H-6,7-dihydrobenz-[2',3']-oxepino-[4,5-b]-indole and its 12H-benzyl analogue were tested for and found to be devoid of antiserotonin activity.

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2/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124225

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RELATIVE MERITS OF TWO FUNDAMENTALLY DIFFERING HYPOTHESES REGARDING THE HARDENING OF METALS BY HOT ROLLING AND OTHER FORMS OF HOT WORKING WITH A VARIABLE DEFORMATION VELOCITY ARE DISCUSSED. THEORETICAL AND EXPERIMENTAL ANALYSES INDICATE THAT THE BETTER HYPOTHESIS IS THAT IN WHICH THE METAL IS REGARDED AS A 'HEREDITARY' MEDIUM, THE RELATION BETWEEN THE DEFORMATION AND DEFORMATION RESISTANCE DEPENDING ON THE DEFORMATION VELOCITY IN A MANNER EXPRESSED BY AN INTEGRAL EQUATION OF THE VOLTERRA TYPE. THE PRACTICAL APPLICATION OF THIS HYPOTHESIS IS CONSIDERED.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--HARDENING OF METALS BY HOT WORKING WITH A VARIABLE DEFORMATION VELOCITY -U-

AUTHOR-(03)-SUYAROV, O.I., LEL, R.V., AKS, V.YU.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V. U. Z., TSVETNAYA MET., 1970, (1), 130-135

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL HARDENING, BIBLIOGRAPHY, HOT ROLLING, METAL DEFORMATION, DEFORMATION RATE, IMPACT LOAD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0530 STEP NO--UR/0149/70/000/001/0130/0135

CIRC ACCESSION NO--AP0124225

UNCLASSIFIED

USSR

MAKSUDOV, A. M., et al., Uzbekskiy Khimicheskiy Zhurnal, Vol 17, No 1, 1973, pp 16-18

2.5 g. $FeSO_4 \cdot 7H_2O$ and diluting to 50 ml. The amount of P was determined by measuring the optical density on a photoelectric colorimeter with a red filter. A standard curve was used that was obtained by carrying out determinations on solutions prepared by diluting a solution of 0.04394 g. KH_2PO_4 in 1 l. H_2O, which contained 0.01 mg P per ml. The relative error in determinations was $\leq$ 0.3%. The method is suitable for the determination of P in organophosphorus pesticides.

2/2

Organophosphorous Compounds

USSR UDC 543.847

MAKSUDOV, A. M., TADZHIBAYEV, YU., and AKRAMOV, S. T., Order of the Labor Red Bannder Institute of the Chemistry of Plant Substances, Academy of Sciences Uzbek, SSR

"A Colorimetric Method for the Determination of Phosphorus in Organophosphorus Compounds"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, Vol 17, No 1, 1973, pp 16-18

Abstract: The following method for the determination of P in organophosphorus compounds was developed. The substance (9-10 mg) was oxidized by heating it in a test tube with 0.5 ml 10 N H_2SO_4 and a few drops of concentrated HNO_3. On completed oxidation the contents of the test tube were heated to eliminate excess HNO_3. The contents were diluted with distilled H_2O, whereupon the solution was neutralized with a 5% KOH solution and brought to 100 ml. One ml. of the solution was combined with 2 ml. of a solution prepared by reducing 5 ml of an ammonium molybdate solution in 10 N H_2SO_4 (5 g. ammonium molybdate in 50 ml solution) on addition of 35 ml H_2O with

USSR

AKRAMOV, S. A., Razvitiye i optimiz. rezhimov energosistem (Development and Optimization of the Operating Conditions of Power Systems -- collection of works), vyp. 2, Tashkent, Fan Press, 1970, pp 44-65 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye224)

the described methods permit optimization of the power system operating conditions with respect to reactive power with up to 35 junctions. The large problems can be solved by separation of large systems into subsystems. The calculations are performed with an accuracy up to one reactive millivolt-ampere. Here, for optimization of the conditions by the first method, 3.5 hours are required, by the second method, about 2 hours, and by the third method, 12 minutes on the Ural-2 computer. The third method can be used for operative correction of the operating conditions with respect to reactive power. There are 2 tables and an 8-entry bibliography.

2/2

USSR

UDC 621.311.338.4.001.24

AKRAMOV, S. A.

"Some Problems of Optimization of the Operating Conditions of Power Systems with Respect to Reactive Power Using a Digital Computer"

V. sb. Razvitiye i optimiz. rezhimov energosistem (Development and Optimization of the Operating Conditions of Power Systems -- collection of works), vyp. 2, Tashkent, Fan Press, 1970, pp 44-65 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye224)

Translation: Three new optimization methods with respect to reactive power and the results of comparing them are presented: 1) coordinate descent with respect to reactive power; 2) coordinate descent with respect to voltage; 3) use of analytical expressions for calculating the optimal values of the reactive power of the sources. The last-mentioned consists in the fact that for the initial conditions with respect to analytical expressions, optimal values of the reactive power of all the regulated sources are calculated, the node restrictions are checked, and the operating conditions with new values of the reactive power of the sources are calculated which are the initial conditions for the next optimization step. The programs implementing

1/2

USSR UDC:553.982.2(575.15)

AKRAMKHODZHAYEV, A. M., ERGASHEV, K. A., AKHMEDOV, Kh. A., OGAY, V. F., BAZARBAYEV, E. G., Tashkent, Uzbekskiy Geologicheskiy Zhurnal, No. 6, 1970, pp. 15-19

regional -- migration from the deeper portion of the oil and gas forming area throughout the entire history of geological development of the structural plan, i. e. both before and after the morphological formation of the structural forms.

2/2

USSR UDC:553.982.2(575.15)

AKRAMKHODZHAYEV, A. M., ERGASHEV, K. A., AKHMEDOV, Kh. A., OGAY, V. F., BAZARBAYEV, E. G.

"Evaluation of Prospects for Oil and Gas Content of Eastern Portion of Fergana Depression in the Light of New Data"

Tashkent, Uzbekskiy Geologicheskiy Zhurnal, No. 6, 1970, pp. 15-19

Abstract: In spite of the significant number of prospecting operations which have been conducted over the past decade in the Fergana depression, the prospects for oil and gas finds in the eastern portion of this depression have not yet been properly evaluated. This article presents a description of the Suzakskaya structure, which has been a judged promising. Based on the description presented, it is concluded that the formation of the overwhelming majority of oil and gas deposits in this region has occurred primarily due to migration of hydrocarbons from oil and gas conducting suites into collectors within formations, as well as due to lateral --

USSR

UDC 621.315.592

TSARENKOV, B. V., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 921-925

The electric and electroluminescent characteristics of the $Ga_{1-x}Al_xAs$ p-n-structures with an area of 0.5 mm^2 at room temperature are as follows: 1) the forward current increases exponentially with an increase in voltage ($I \sim \exp(qV/\beta kT)$ where $\beta = 1.4-1.6$) to voltages of 1.5-1.6 volts, and then it increases linearly (current cutoff voltage 2.0-2.1 volts); 2) the radiation spectrum consists in only one band with a peak energy of 1.72-1.76 electron volts which does not shift with current variation; 3) with an increase in current the radiation power first increases superlinearly(to 2 amps/cm^2) and then linearly (to 100 amps/cm^2); 4) the external quantum yield of the radiation is 0.5-0.6 percent for 20 milliamps and 0.6-0.8 percent for 200 milliamps; 5) the characteristic times of the transient electroluminescent processes decrease with an increase in current; they are 200 nanoseconds for small currents and 100 nanoseconds for large currents.

These light sources do not become degraded for at least 1,000 hours of operation with a forward current of 20 milliamps and an ambient temperature of +70°C.

2/2

UDC 621.315.592

USSR

TSARENKOV, B. V., [redacted], VERESHCHAK, N. I., YEVSTROPOV, V. V., IMENKOV, A. N., YAKOVLEV, YU. P. Physicotechnical Institute imeni A. F. Ioffe of the USSR Academy of Sciences, Leningrad

"Diode Sources of Red Light made of Variband $Ga_{1-x}Al_xAs$:Si p-n- structures"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 921-925

Abstract: The results of the development and study of the properties of semiconductor sources of red light based on variband $Ga_{1-x}Al_xAs$ p-n-structures alloyed with Si are discussed. These p-n-structures were created by epitaxial growth of a solid solution of $Ga_{1-x}Al_xAs$:Si from a liquid Ga-Al-As-Si solution on an n-Ga-As substrate with cooling; the composition of the $Ga_{1-x}Al_xAs$ epitaxial layer was smoothly varied in the direction of growth so that the width of the forbidden zone decreased from the boundary with the substrate with a gradient of $(2-3)\cdot10^{-2}$ ev/micron. The thickness of the p-region in the light diodes was 20-30 microns, and the n-region was 60-70 microns. Radiation was generated perpendicular to the plane of the p-n-junction or through the p-layer or through the n-layer of the p-n-structure.

- USSR

TSARENKOV, B.V., et al, Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 677-681

interband transition, then this made it possible to assume that the inherent radiation contributes an important portion of the annihilation of the free excitons. The authors are grateful to D.N. Nasled for his interest and attention to the work. 4 fig. 15 ref. Received by editors, 2 Aug 1971.

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USSR

TSARENKOV, B.V., et al, Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 677-681

of the solid solution and is equal to $4.8 \cdot 10^{-4}$ e.v./degree. The halfwidth of the radiation band (δ) is decreased with an increase of x; δ is linearly increased with an increase of temperature in the interval 77 ÷ 370° K. The temperature coefficient of the halfwidth of the band practically does not depend on the composition of the solid solution and is equal to 1 ÷ 1.3 of the Boltzmann constant. The photon flux of the radiation band of solid solutions with a fixed level of excitation is exponentially decreased with an increase of temperature in the temperature range 77 ÷ 370° K. The mechanism of the radiative recombination is explained by a comparison of the energy of the maximum radiation spectra with a wide forbidden zone (E_g) of solid solutions of various compositions which are determined by the spectra of the short-circuit photocurrent of the structure Au-$Ga_{1-x}Al_xAs$ with a metal-semiconductor barrier. The edge of the photocurrent spectra has a form characteristic of the base of absorption of light at the free excitons. Because the energy of the maximum of the photoluminescent spectra proved to be approximately equal to the width of the forbidden zone, determined by the energy of the free excitons, then this made it possible to assume that the radiation observed is inherent and not extrinsic. Because the halfwidth of the radiation band at high temperatures proved to be smaller than expected for

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USSR UDC 621.382.3

TSARENKOV, B.V., AKPEROV, YA.G., IMENKOV, A.N., YAKOVLEV, YU.P. [Physico-Technical Institute imeni A.F. Ioffe, Academy of Sciences, USSR, Leningrad]

"Temperature Dependence Of Edge Photoluminescence Of n-$Ga_{1-x}Al_xAs$ Solid Solution Epitaxial Layers"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 677-681

Abstract: The edge photoluminescence is studied of crystals of n-$Ga_{1-x}Al_x$ ($0 < x \leqslant 0.4$) in a wide temperature range (77 ÷ 370° K) for determination of the empirical dependences of the energy of the maximum ($h\nu_m$), halfwidth (δ) and the photon flux (Φ) of the edge radiation band, on the temperature T. The photoluminescence spectra of the solid solutions investigated contained only one band. The band was nonsymmetrical: the long-wave slope is steeper than the short-wave. The energy of the maximum of the band is changed from 1.49 to 1.90 e.v. (300° K) as a function of the composition of the solid solution with a change of x from 0.01 to 0.4; $h\nu_m$ is decreased with an increase of the temperature in the interval 77 ÷ 370° K and with temperatures above 100 ÷ 125° K the dependence of $h\nu_m$ on T can be approximated by the straight line $h\nu_m = h\nu_{m0} - \alpha_\nu T$, where $h\nu_{m0}$ is the characteristic energy resulting from extrapolation of the linear dependence $h\nu_m$ (T) in the interval 100 ÷ 370° K to absolute zero temperature and α_ν is the temperature coefficient which does not depend on the composition

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AKPEROV, Ya. G. et al., USSR Author's Certificate No 339248

tinguished by the fact that the two-layer structure consists of a layer of GaAs and a layer of a solid solution of $Al_xGa_{1-x}As$ of variable composition. On the boundary of the interface between these, X is greater than 0.3; on the boundary between the solid solution and the ohmic contact, X is less than 0.3.

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USSR

UDC 621.382

AKPEROV, Ya. G., IMENKOV, A. N., TSARENKOV, B. V., YAKOVLEV, Yu. P., "Order of Lenin" Physicotechnical Institute imeni A. F. Ioffe

"A Semiconductor Induction Element"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 73, Author's Certificate No 339248, Division H, filed 3 Aug 70, published 8 Feb 73, pp 194-195

Translation: This Author's Certificate introduces: 1. A semiconductor induction element which is a two-layer semiconductor structure with ohmic contacts. As a distinguishing feature of the patent, the Q of the controlled inductive reactance is sharpened and the range of the working frequency is extended by making the semiconductor structure from two different semiconductive materials of the same conductivity type. One of the layers has a fixed chemical composition with respect to thickness, and the other is a semiconductor of variable chemical composition. The width of the forbidden zone at the boundary of the semiconductor layers is greater than the width of the forbidden zone of the first semiconductor, and it gradually decreases as the ohmic contact is approached. 2. A modification of this element dis-

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USSR

AKOYEV, I. G., et al., Luchevoye Porazheniye Mlekopitayushchikh i Statisticheskoye Modelirovaniye, Atomizdat, 1972 99 pp

Dose Relations of Radiation Sickness Under the Effect of Protective Factors 48

4. Statistical Models of the Development of Pathological Processes with Time 53

Evaluation of the Post Radiation Recovery with Respect to Resistance of the Organism to Repeated Irradiation 53

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Laws of Distribution of Lethal Outcome Time 73

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- - USSR

AKOYEV, I. G., MAKSIMOV, G. K., and MALYSHEV, V. N.

Moscow, Luchevoye Porasheniye Mlekoptiayushchikh i Statisticheskoye Modelirovaniye (Radiation Sickness in Mammals and Statistical Modeling), Atomizdat, 1972, 99 pp

Translation:

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USSR

PATON, B. Ye., et al., Avtomaticheskaya Svarka, No 6, June 1972, pp 1-4

seams are welded across a ceiling, is inversely proportional to melting width. The width can be decreased by increasing the welding rate and decreasing the radius of the electron beam. Series-produced equipment with beam powers of 15 kw and mean diameter 0.5 mm can achieve stable melting of seams to up to 20 mm deep.

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USSR

UDC: 621.791.72

PATON, B. Ye., NAZARENKO, O. K., LOKSHIN, V. Ye., AKOP'YANTS, K. S.,
Ye. O. Paton Electric Welding Institute imeni Ye. O. Paton, Academy of Sciences, UkrSSR

"Features of Cathode Ray Welding in Various Spatial Positions"

Avtomaticheskaya Svarka, No 6, June 1972, pp 1-4

Abstract: The present study was designed to determine the effect of joint orientation relative to the direction of the force of gravity on cathode ray welding with a sharply focussed beam for metals up to 30-40 mm thick without finishing of edges. Experiments were pefformed on stainless steel specimens using a type U-212 cathode ray welder with U-250A power supply and U-530M welding gun in a vacuum of $5 \cdot 10^{-5}$-$1 \cdot 10^{-4}$ mm hg. The direction of the force of gravity affects seam strength only when welding in the "ceiling" position. The stability of the welding bath in this position depends to a great extent on the viscocity of the liquid metal, rate of crystallization, and relationship between surface tension across the outside of the bath and pressure produced by the weight of the liquid metal in the bath. These factors are of little significance for horizontal seams welded onto a vertical surface. For the metal in question, the maximum melting depth, beginning at which drops are formed when

USSR

Nazarenko, O. K., Kaydalov, A. A., Akop'yants, K. S., Loksh n, V. Y.e, Kiev, Avtomaticheskaya Svarka, No 8, Aug 73, pp 75-76.

movement. This wave is the main motive force of metal transfer.

2/2

USSR UDC: 621.791.947

NAZARENKO, O. K., KAYDALOV, A. A., AKOP'YANTS, K. S., LOKSHIN, V. Ye.

"Periodicity of Transfer of Metal During Cathode Ray Welding"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 73, pp 75-76.

Abstract: The following mechanism is proposed for metal transfer during cathode-ray welding. The primary force acting on the liquid metal is the recoil reaction arising upon partial evaporation of the metal by the electron beam. Since the recoil reaction is directed perpendicular to the surface of the melted metal, its motion along the walls of the channel is possible only when the surface is curved so that a sufficient tangential component of recoil reaction arises. Curvature of the surface of the melted metal occurs as follows. At a certain film thickness of liquid metal on the leading wall of the channel, waves arise on the free surface of the film, the amplitude of the waves increasing as film thickness increases. At a certain critical thickness, the area of the curved surface is sufficient for the recoil reaction along the forward wall to cause movement of a given curve into the depth of the channel, capturing the main mass of the melted metal located below. The amplitude of the wave increases, accelerating the

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USSR

UDC 616:001.18

AKOPOVA, A. L. and AKOPYAN, Zh. L., Institute of Cardiology, Ministry of Health, Armenian SSR

"Morphological Changes in the Viscera During Deep Hypothermia"

Yerevan, Biologicheskiy Zhurnal Armenii, No 10, 1972, pp 106-107

Abstract: Histologic examination of various tissues of rats subjected to general hypothermia for up to 3 hours revealed degenerative changes in the heart, liver, and kidneys, the intensity varying with the depth and duration of exposure to cold. When the animals received injections of a 30% glycerin solution (1 ml/100 g) prior to hypothermia, the above organs remained virtually intact for a short while, and during the next 2 hours the morphological changes were less pronounced than in the animals not given glycerin.

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USSR UDC 591.1.15

GORKIN, V. Z., AKOPYAN, ZH. I., KULYGINA, A. A., and ZEYNALOV, T. A.

"Disturbances of Deamination of Some Nitrogen Compounds and a Method of Normalizing Them Experimentally"

Byul. eksperim. biol. i med. (Bulletin of Experimental Biology and Medicine), 1971, 72, No 11, pp 42-45 (English summary) (from RZh-Biologicheskaya Khimiya, No 4, 25 Feb 72, Abstract No 4F1256 from summary)

Translation: White rats which had been x-irradiated (1000 rad dose) were used in the experiments. Diminution of monoaminoxidase activity, accompanied by the appearance of histamine and AMP deaminase activity, occurs in rat liver mitochondria after irradiation or intraperitoneal injection of oxidized oleic acid. Repeated injections of rats with adenozine-2'(3')-monophosphate result in normalization of these disturbances of the deamination of nitrogen compounds.

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USSR

KRASNOV, M. M., et al., Vestnik Oftal'mologii, No 2, 1973, pp 9-12

produced by the radiation was substantially restored to a state in which it apparently was capable of functioning. The sclera was not affected. The study that had been conducted indicated that in the search for optimum conditions of laser irradiation one must attempt to reduce as far as possible mechanical effects and restrict the thermal effects to the layer of pigmented epithelium.

2/2

UDC 615.849.19.015:617.849.1-[illegible]

USSR

KRASNOV, M. M., SAPRYKIN, P. I., DOROKIN, P. P., NIKOL'SKAYA, G. M., AKOPYAN, V. S., and [illegible], N. G.

"Electron-Microscopic Study of Tissues of the Eye Fundus Following Laser Coagulation"

Moscow, Vestnik Oftal'mologii, No 2, 1973, pp 9-12

Abstract: The changes produced in the tissue of the eye fundus following exposure to therapeutic doses of laser radiation were studied in [illegible] on pigmented rabbits of the chinchilla breed with the purpose of [illegible] for [illegible] pertaining to [illegible] conditions of applying laser radiation [illegible] coagulation of the retina in the therapy of retinal detachment. [illegible] the energy range of 0.0[illegible]-0.06 J ± 6% (energy densities of [illegible] J/[illegible]) emitted by a [illegible] laser was applied. The irradiated eye tissues were [illegible] to microscopic and electron-microscopic study on [illegible] periods of 10 min [illegible] wks after photocoagulation. The [illegible] limited to the [illegible] layers of the retina and the pigment epithelium [illegible] deeper layers were affected only slightly. Two types of [illegible] to the [illegible] and to the pigment epithelium were observed, one due to [illegible] of an explosive nature and another due to thermal coagulation effects. Within 2-3 wks the part of the photoreceptor apparatus at the site of the injury

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2/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0121610

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INCUBATION OF A HOMOGENATE OF DOG BRAIN BLOOD VESSELS WITH PYRIDOXAL PHOSPHATE AND GLUTAMATE YIELDED 48 MU G GAMMA AMINOBUTYRIC ACID, G OF FRESH TISSUE IN 30 MIN. SIMILAR EXPTS. WITH DOG AORTAS AND CAROTID ARTERIES YIELDED NO DETECTABLE AMTS. OF THIS COMPD. FACILITY: EREVAN. MED. INST., EREVAN, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--GLUTAMIC ACID DECARBOXYLASE ACTIVITY IN BRAIN VESSELS -U-

AUTHOR-(03)-MIRZOYAN, S.A., KAZARYAN, B.A., AKOPYAN, V.P.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1241-1

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GLUTAMIC ACID, DEHYDROGENASE, ENZYME ACTIVITY, BRAIN, AMINOBUTYRIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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CIRC ACCESSION NO--AT0121610

UNCLASSIFIED

USSR

UDC 678.01.535

AKOPYAN, S. G. and AVAKYAN, Yu. V., Yerevan Department of the VNIIKP (All-Union Scientific Research Institute of the Canning Industry)

"Determination of the Temperature of a Specimen During Pulsed Irradiation by Sunlight"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR, Seriya Tekhnicheskikh Nauk, Vol 25, No 5, 1972, pp 43-46

Abstract: Polymer materials being tested by an accelerated method for the action of sunlight are irradiated by concentrated sunlight. Since uninterrupted exposure causes excess heat, cooling is accomplished by pulsed irradiation. A formula is developed for analytic determination of the temperature attained by this method. 1 figure. 4 references.

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USSR

AKOPYAN, S. A., Biologicheskiy Zhurnal Armenii, Vol 23, No 4, 1970, pp [illegible]

mechanisms of the cardiovascular system is lowered, however subliminal doses of hormones evoke a weak response, which remains weak even with large doses. There is much yet to be studied.

1/2

USSR

AKOPYAN, S. A., Chair of Human and Animal Physiology, Yerevan State University

"Reactivity of the Organism and Its Radiosensitivity"

Yerevan, Biologicheskiy Zhurnal Armenii, Vol 23, No 4, 1970, pp [illegible]

Abstract: Some diurnal animals are radiosensitive during the [illegible] radioresistant at night, while some nocturnal animals are sensitive at night and resistant in the daytime. This circadian lability affects the functions of the whole organism. Irradiation with a dose causing 50% mortality in homoiothermic animals at 20°C causes 100% mortality above 37°C or below 2°C. Poikilothermic animals are labile at 20°C and resistant at 15-8°C. The sexually mature of all types of animals are more resistant than others. Rabbits fed on vegetables [illegible] more vulnerable than those fed on oats or a mixed diet. Hyperhydremia before irradiation lowers resistance, but if induced after irradiation it lowers [illegible]. Irradiated diabetic rats bear the acute phase with ease, the symptoms [illegible] slowly, lethality is prolonged, and the mortality rate is lessened. Removal of bone marrow before or after irradiation lowers resistance, which is improved by the introduction of healthy bone marrow. Comparatively small doses of irradiation seem to stimulate hemopoietic functions. Narcotics definitely lower resistance by impairing adaptive mechanisms. Adrenalin and acetylcholine lower resistance when given alone, but when given simultaneously, they raise resistance. The amplitude of both pressor and depressor

USSR

AKOPYAN, S. A., and UZUNYAN, A. A., Biologicheskiy Zhurnal Armenii, Vol 24, No 4, Apr 71, pp 33-40

accompanied by predominance of excitation processes, some disinhibition of the central nervous system, and reinforced respiration, blood circulation, and digestion. In the advanced stage of radiation sickness on the 15th day after irradiation, there was delayed evacuation of water from the stomach into the intestine, which was accompanied by oligouria. The kidney function at this stage was affected to a greater extent than elimination from the stomach. Elimination of the isotonic solution from the stomach was delayed to a greater extent than that of hypotonic water. As radiation sickness advanced, differences in the regulation of water metabolism in relation to the type of water used (hypo-, hyper-, or isotonic) tended to decrease and the effect of the initial state of the stomach (rest or hunger contractions) at which water was introduced into the stomach on the evacuation of water from it diminished. In the experiments conducted 1,550 ml water were introduced into the stomach.

2/2

USSR UDC 591.1

AKOPYAN, S. A., and UZUNYAN, A. A., Chair of Human and Animal Physiology Yerevan State University, Yerevan

"State of the Regulatory Mechanisms of Water Metabolism in Irradiated Animals Upon Hyperhydration. I. Evacuation of Liquids from the Stomach Into the Intestine and Diuresis"

Yerevan, Biologicheskiy Zhurnal Armenii, Vol 24, No 4, Apr 71, pp 33-40

Abstract: Water metabolism upon hyperhydration was studied on dogs with stomach fistulas, isolated sections of the intestine in some cases, and a urinary bladder operated upon according to Pavlov. Hypotonic water (Yerevan drinking water) or isotonic water containing 0.9% NaCl was used. The effects of irradiation with x-rays in a dose of 700 R on the transfer and elimination of water were studied. The results indicated that the water-salt metabolism underwent phasic changes in the course of radiation sickness. In the first days after irradiation, the following processes were accelerated: evacuation of water from the stomach into the intestine, its resorption from the intestine, and elimination by the kidneys as compared with these phenomena for non-irradiated controls. This was the phase of increased reactivity of the regulatory mechanisms, which had the aim of rapidly restoring the water metabolsim disturbed by hyperhydration. It was

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GASPARYAN, A. M., et al., Doklady Akademii Nauk Armyanskoy SSR, Vol LV, No 5, 1972, pp 281-285

The expenditures of work on holding the particles in the suspended state (or on sliding of the phases) can always be behind by the initial given V, ε, and $\phi = f(\phi)$. If, together with the air Q, water in a volume W is also used in the column, transport of the water-air mixture in this same manner is obtained also for this case:

$$P_1Q_1\ln(P_1:P_2)=h_2W_{\gamma 1}+(V_k^2:2g)W_{\gamma 1}+HF_{\phi\gamma 1}c+\Delta p(Q+W). \qquad (8)$$

Thus, the problem consists of finding the expenditures of work in the slipping of the phases -- the third time in the right-hand side of (8), for which it is necessary to define the mean values of c (the volumetric concentration of particles in the suspension) and c. This is done by analogy for the water and solid particle system.

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GASPARYAN, A. M., Corresponding Member of the Armenian SSR Academy of Sciences, SIRADEGYAN, S. Ye., AKOPYAN, R. Ye.

"Energy Expenditures on Phase Slipping During Vertical Movement of Two-Phase Systems"

Yerevan, Doklady Akademii Nauk Armyanskoy SSR, Vol LV, No 5, 1972, pp 281-285

Abstract: A quantitative analysis is made of all airlift components on which pressure or the work of the operating element -- compressed air -- is spent. First, the case is considered where a stream of water lifts monodisperse solid particles into suspension; then the case is considered where there are no particles of defined shape and size and the water raised into suspension moves randomly in individual jets which are variable in time, colliding along each other and with the walls of the apparatus, with air bubbles, or an air stream; but the water falls (slips) with respect to the air at some velocity c. The case is also considered where, together with the water Q, solid particles with a volume W are also fed into the column. Then the column gradually is filled with suspension and the suspension begins to overflow.

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Table 1 (continued)

iso-C_4H_9	240 (179-321)	180 (112.5-288)	1500	+
iso-C_5H_{11}	208 (163-266)	82 (51.2-131.2)	1700	0

0 - absence of convulsions; +, ++, +++ - weak, average, and severe convulsions, respectively.

Thus, the N-methyl-α-substituted succinimides possess a weak anticorazoll activity and are more active in the case of a maximal electric shock. Our results did not verify the findings of G. Chen and coauthors stating that the N-methylation of succinimide derivatives increases their anticorazoll activity.

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Table 1 (continued)

C_3H_7	inactive	230 (184-287)	1100	+
C_4H_9	inactive	inactive	1400	++
C_5H_{11}	inactive	inactive	1800	++
C_6H_{13}	220 (175-276)	160 (126-203)	2000	++
C_7H_{15}	inactive	inactive	2000	++
C_8H_{17}	inactive	inactive	2200	++
iso-C_3H_7	186 (149-230.5)	160 (130-197)	1600	0

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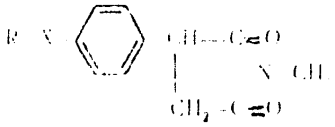
Table 1

Anticonvulsive activity of compounds having the general formula



P=0.05

R	ED_{50} corazoll, mg/kg	ED_{50}, max. el. shock, mg/kg	MRD mg/kg	Nicotine-produced convulsions
CH_3	inactive	239 (201-284)	1000	+
C_2H_5	inactive	244 (206.4-287)	1300	+

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Elimination of the tonic extension phase in the case of electric shock and a complete prevention of convulsions in the case of corazoll served as indicators of the anticonvulsive properties of succinimides. All responses were recorded in an alternative fashion. Preparation dosages which prevented the development of convulsions in 50% of animals (ED_{50}) were calculated by the Litchfield and Wilcox method. In the case of convulsions produced by nicotine and arecoline, the effect of succinimides was evaluated on the basis of a three-point system.

The experimental results showed that all compounds studied possess a distinctive anticonvulsive activity with respect to a maximal electric shock. The strongest anticonvulsive effect was shown by a compound with isoamyl radical at p-position. Anticonvulsive activity was observed mainly in compounds containing isoradicals (Table 1). As a group these compounds do not possess the antiarecoline properties. With respect to convulsions caused by nicotine, it can be said that compounds containing methyl, ethyl, and propyl radicals at p-position decrease the intensity of convulsions, and compounds containing isoradicals in the same position prevent them completely.
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